

REMARKS

1. Status of the Claims

The status of the claims is as follows:

Claims Pending: 1-15

New Claims Entered: 16

Claims Rejected: 1-15

Claims Objected to: None

Claims Allowed: None

Claims Withdrawn: None

2. Support for Claim Amendments

The amendments to claims 1, 15, and 16 can be located at least for example on page 12, lines 26-27 ("to obtain a fat/oil-rich cacao nib extract"); on page 8, lines 18-19 ("wherein the removal step comprises...in a disk centrifuge for two-phase (solid-liquid) separation"); and in the claims as originally presented. Thus, Applicants believe that no prohibited new matter has been introduced by way of the above amendments to the claims.

Applicants have made the above amendments without prejudice to or disclaimer of any subject matter believed to have been cancelled by way of amendment. Applicants reserve the right to file a continuation or divisional application on any of the cancelled subject matter.

3. Information Disclosure Statement

Applicants submit herewith an Information Disclosure Statement ("IDS"). Applicants respectfully request consideration and acknowledgment of the IDS with the Office's next official communication.

4. Rejection under 35 U.S.C. § 103(a)

4.1 Claims 1-15

The Office rejects claims 1-15 under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 4,758,444 or 4,871,562 (“Terauchi I or II” respectively) alone or, if necessary, as further evidenced by Minifie (1980, *Chocolate, Cocoa and Confectionery*, 2nd Ed., AVI Publishing Co., Inc., Westport CT, p. 69) (“Minifie”). The Office’s reasons were set forth in the Office’s prior Action mailed March 25, 2008. In that Office Action, the Terauchi references were asserted for disclosing:

In example 2 cacao beans are shelled and cracked to produce cacao nibs. Then sodium carbonate and water are added, mixed and stirred at 90C for one hour. Then the cacao mass was stirred in water maintained at 120C and converted into a colloidal form. The mixture was then introduced into a centrifugal separator to extract the water soluble portion of the cacao. The water soluble portion was concentrated at 90C and then spray dried at 100C. Then the cacao was formulated into a beverage in Test Example 2 for taste evaluation. The claims appear to differ from Terauchi in the recitation of the temperature of extraction but cacao fat is known to have a melting point that is lower than 90C and Minifie is relied upon for support of this assertion.... It is appreciated that homogenization is not mentioned but to homogenize the cacao mixture of Terauchi would have been an obvious way to mix the cocoa drinks that were prepared for taste evaluation. It is appreciated that the fact content of the beverage is not mentioned but to optimize the cacao butter content of Terauchi would have been an obvious way to control the caloric content of the beverage. It is appreciated that the packaging container is not mentioned but packaging foods in transparent containers is well known in the art.

Office Action mailed March 25, 2008, pages 2-3.

[A] Three Phases v. Two Phases

Applicants traverse the rejection to the extent it applies to the amended claims.

Applicants note that claim 1 now recites that the extraction occurs at a temperature higher than the melting point of cacao fat/oil by treating the extract in a disk centrifuge for two-phase (solid-liquid) separation. Thus, the resultant phases are a liquid phase and a solid phase. The liquid phase contains the cacao fat/oil rich portion and is processed into a chocolate drink, whereas the insoluble solids are in the solid phase. Terauchi I and II teach separation by a *three-phase separation* and not a two-phase separation. Additionally, Terauchi I and II teach the removal of cacao butter not a liquid phase. As discussed in the SUMMARY OF THE INVENTION of the Terauchi I *and* II, the mixture is separated into three components:

- (1) a mixture of water-soluble portion and fine particle portion
- (2) cacao butter; and
- (3) an extraction residue.

The instant claims produce a two phase separation.

Additionally, U.S. Pat. No. 4,758,444 teaches that the mixture (1) and the cacao butter (2) are used respectively to produce chocolate drinks and chocolate. *See* col. 6, ll. 4-15. Only the mixture of water-soluble portion and a fine particle portion are used to produce a chocolate drink. The Terauchi patents do not teach the use of a cacao fat/oil to prepare a chocolate drink.

Applicants provide below a listing of other places in these publications wherein the production of the chocolate drink is taught with a *three-phase separation extract* through the *removal of the fat/oil from the extract*.

- (i) Terauchi I ('444 patent) – FIELD OF THE INVENTION states that the advantage of the invention is that an extraction of a water-soluble portion, a fine particle portion, and cacao butter portion. It does not teach or suggest a two phase separation, but rather only the three phase separation. A two-phase separation, given that this three-phase separation is asserted as an advantage, would be a teaching away from Terauchi I.

(ii) Terauchi I ('444 patent) teaches at col. 4, ll 141-26 that the above three components are obtained from cacao mass or cocoa powder. At col. 4, lines 27-41, Terauchi then teaches that the mixture of the water-soluble portion and a fine particle portion is concentrated and dried. This dried produce is then used to produce the chocolate drink. *See* col. 6, ll. 4-15. In contrast, the cacao butter is dehydrated. *See* col. 4, ll. 42-54. The *dehydrated cacao butter* then is used to produce chocolate, not a chocolate drink. *See* col. 6, ll. 4-15.

(iii) Examples 1-4 and Test Examples 2-3 of Terauchi I and II teach that the mixture of a water-soluble portion and a fine particle portion, and the cacao butter are obtained separately.

The purpose of the instant claims is to prepare a cacao fat/oil rich chocolate drink. These references teach away from such a drink. Additionally, the instant claims use a two phase process, which is commercially easier to separate than a three-phase process. This two-phase process insures the retention of cacao fat/oil or cacao butter in a cacao nib extract.

[B] Cacao Nibs as Starting Material

Terauchi I and II fail to teach at least another limitation in the claims. Specifically, the references fail to teach the extraction from cacao nibs with water. The Terauchi publications in contrast utilize cacao mass (which are ground cacao nibs as set forth for example on page 3, line 24 of the specification) or cocoa powder to generate the extract. In contrast, cocoa powder is produced by separating cacao butter from the cacao mass and pulverizing the resultant cacao solid (*see, e.g.*, Terauchi II, '562 patent at col. 2, ll. 39-40). Thus, as is apparent, the particle size of the cacao nibs is much larger than that of the particles present in the cacao mass or in the cocoa powder. This rules out the presence of large amounts of fine insoluble solids, because they are not contained in cacao nibs. Therefore, there is no need to remove these insoluble solids, because they are not present. As noted in the specification, it is difficult to remove these fine particles. *See e.g.*, page 2, line 28 to page 3, line 3. The lack of these small particles is

commercially important, because it reduces the risk of precipitation in the chocolate drinks. Such drink precipitates are commercially undesirable.

Minifie is used to further support the Office allegations of Terauchi. However Minifie fails to cure the defects discussed above for Terauchi I and II. Additionally, it teaches nothing regarding using a two-phase separation in a disk centrifuge at a temperature higher than the melting temperature. Minifie offers no suggestion for such a limitation or that the three-phase used in Terauchi would be better as a two-phase from cacao nibs. None of the changes needed are suggested in Minifie that would overcome the defects inherent to Terauchi I and II either when viewed alone or in any combination.

Thus, as the limitations of claim 1 as amended are not taught by Terauchi I and/or II, nor are they cured by Minifie, claim 1 is not obvious. If claim 1 is not obvious, dependent claims 2-14 similarly are nonobvious.

Claim 15 as amended recites “step of removing insoluble solids from a hot water extract of cacao nibs to obtain a fat/oil-rich cacao nib extract, wherein the removal step comprises treatment of the hot water extract in a disk centrifuge for two-phase (solid-liquid) separation, and”. Therefore, claim 15 is nonobvious for the same reasons as asserted for claim 1. The same argument would apply for new claim 16.

A finding of obviousness under 35 U.S.C. § 103 requires a determination of (1) the scope and content of the prior art, (2) the differences between the invention and the prior art, (3) the level of ordinary skill in the art, and (4) whether the differences are such that the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made. *Graham v. John Deere Co.*, 383 U.S. 1 (1966). Applicants note that the scope and content of Terauchi I and II and Minifie are directed to solving *different problems* using *different materials*. Applicants also directed the Office’s attention to several differences (different materials, temperatures, and phase separations), that distinguish the claims as amended over Terauchi I and II and Minifie. These differences are such that when considered *as a whole* would not have rendered the claims as amended obvious to the skilled artisan. In all the tests promulgated by the Office for determining success post *KSR*, all require an expectation of

success for the combination. There is further no expectation of success that the combination of using the cacao nibs would have produced the achieved result.

Accordingly, in view of the above arguments and amendments, Applicants submit that the Office cannot adduce a *prima facie* obviousness rejection to claims 1-15 as amended. The rejection can be appropriately withdrawn and claims 1-15 allowed.

4.2 Claims 1 and 7

The Office further rejects claims 1 and 7 under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 5,389,394 ("Weyersbach") as further evidenced by Minifie. The reasons for the rejection were stated in the March 25, 2008 Office Action as follows:

Weyersbach discloses producing cocoa extract. In example 1 cocoa nibs are poured into a column and extracted with water at 73C for 2.5 hours to form a cocoa extract. The claims appear to differ from Weyersbach in the recitation of the temperature of extraction but cacao fat is known to have a melting point that is lower than 73C and Minifie is relied upon for support of this assertion. With the evidence of Minifie before him, it would have been obvious to one of ordinary skill in the art to utilize the process of Weyersbach to prepare the cacao extract of the claims.

March 25, 2008 Office Action, pages 3-4.

Applicants traverse the rejection of claims 1 and 7 to the extent it applies in view of the amendments to the claims. Weyersbach fails to at least teach the limitation of claim 1 of "to obtain fat/oil-rich cacao nib extract, wherein the removal step comprises treatment of the extract obtained from the extraction step, in a disk centrifuge for two-phase (solid-liquid) separation." Weyersbach uses a column (*see e.g.* col. 2, ll. 11-29) not a centrifuge. Additionally, Weyersbach uses a revolving extractor (*see* Figure 2 of Weyersbach). Minifie fails to cure the defects as discussed above.

Accordingly the references when viewed alone or in combination cannot suggest amended claim 1. Claim 7 depends from claim 1 and thus includes all the limitations of claim 1. Therefore, claim 7 also cannot be obvious in view of the combination of Weyersbach and Minifie for the same reasons. Accordingly, the rejection can be withdrawn and the claims allowed.

4.3 Status of Takashi Rejection

Applicants note that the rejection of claims 1-4 under § 103(a) as obvious over Takashi (PAJ 09-075003 abstract) has been withdrawn in view of Applicants prior arguments.

CONCLUSION

In conclusion, this is believed to be in full response to the final Office Action. Applicants request reconsideration and reexamination of this application and the timely allowance of the pending claims. Should any issues remain outstanding or if there are any questions concerning this paper, or the application in general, the Examiner is invited to telephone the undersigned representative at the Examiner's earliest convenience.

Should any outstanding fees be owed or overpayments credited, the Commissioner is invited to charge or credit Deposit Account No. 50-0573.

Respectfully submitted,

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